What is claimed is:

1. An oscillator circuit comprising:

a resonant circuit including a negative resistor, an inductor and an oscillation frequency setting capacitor having a variable capacitance according to a control voltage based on oscillation frequency data and outputting a signal having an oscillation frequency based on the oscillation frequency data;

a temperature detector detecting temperature and generating temperature compensation date based on the detected temperature; and

a plurality of temperature compensating capacitors each of which is electrically connected to the resonant circuit and changed in capacitance value based on the temperature compensation data so as to adjust the oscillation frequency.

2. An oscillator circuit according to claim 1, wherein the temperature compensation data include a plurality of data inverted with a plurality of temperatures as threshold values.

3. An oscillator circuit according to claim 2, wherein the temperature detector includes,

a first current source that outputs a constant current regardless of the temperature,

a first resistor which is connected in series with

the first current source and outputs a first voltage proportional to the current of the first current source,

second and third current sources each of which outputs a current proportional to an absolute temperature,

second and third resistors which are respectively connected in series with the second and third current sources and output second and third voltages respectively proportional to the currents of the respective current sources,

a first voltage comparator which compares the second voltage with the first voltage and thereby outputs first temperature compensation data, and

a second voltage comparator that compares the third voltage with the first voltage and thereby outputs second temperature compensation data.

4. An oscillator circuit according to claim 1, further comprising:

a divider that divides the frequency of the output signal of the resonant circuit by a predetermined division ratio;

a phase comparator which compares a signal outputted from the divider and a reference frequency signal and outputs a signal based on a difference in phase between the two; and

a loop filter which smoothes the output of the phase comparator,

wherein the resonant circuit outputs an output signal having an oscillation frequency equivalent to division ratio times the reference frequency signal with the output of the loop filter as the control voltage.

5. An oscillator circuit according to claim 1, which is mounted to a wireless apparatus that transmits and receives a packet, said oscillator circuit further comprising a temperature compensation data setting unit which is connected to the temperature detector and which obtains and retains the temperature compensation data for each packet and supplies the same to the temperature compensating capacitors.

6. An oscillator circuit according to claim 5, further comprising a frequency data setting unit which obtains frequency data for each transmission/reception of a packet and sets the same to the oscillation frequency setting capacitor,

wherein the temperature compensation data setting unit obtains the temperature compensation data from the temperature detector in parallel with the acquisition of the frequency data by the frequency data setting unit.

7. An oscillator circuit according to claim 1, further comprising:

a plurality of device characteristic compensating

capacitors which are electrically connected to the resonant circuit and are varied in capacitance in accordance with device characteristic compensation data for compensating for variations in the device characteristic of the oscillator circuit;

a monitor circuit which compares a reference voltage corresponding to a control voltage to be supplied to the oscillation frequency setting capacitor at a predetermined temperature and an actual control voltage and outputs the result of comparison thereof; and

a device characteristic compensating circuit which temporarily sets the device characteristic compensation data and determines the device characteristic compensation data in accordance with the output of the monitor circuit subsequent to frequency pull-in at the temporarily-set device characteristic compensation data.

8. An oscillator circuit according to claim 7, wherein the device characteristic compensating circuit repeats the temporary setting of the device characteristic compensation data, the frequency pull-in and the determination of the temporarily-set device characteristic compensation data by the number of the plural device characteristic compensating capacitors every said device characteristic compensating capacitors to thereby determine device characteristic compensation data on the plural device characteristic compensating

capacitors.

9. A method of controlling an oscillator circuit comprising:

providing a resonant circuit including a negative resistor, an inductor and an oscillation frequency setting capacitor having variable capacitance according to a control voltage based on oscillation frequency data and generating an oscillation frequency signal based on the oscillation frequency data, and a plurality of temperature compensating capacitors electrically connected to the resonant circuit;

generating temperature compensation data based on the temperature; and

compensating for a capacitance value of the oscillation frequency setting capacitor in accordance with the temperature compensation data to thereby adjust the oscillation frequency.

10. A method according to claim 9, wherein the temperature compensation data includes a plurality of data inverted with a plurality of temperatures as threshold values.

11. A method according to claim 9, which is mounted to a wireless apparatus that transmits and receives a packet,

wherein in said temperature compensation data setting step, the temperature compensation data is obtained and retained for each transmission/reception of each packet and is set to the temperature compensating capacitors.

12. A method according to claim 11, further comprising:

obtaining the oscillation frequency data, wherein in said temperature compensation data setting, the temperature compensation data is obtained in parallel with the acquisition of the oscillation frequency data.

13. A method according to claim 12, further comprising:

temporarily setting one of a plurality of device characteristic compensation data for determining respective capacitance values of a plurality of device characteristic compensating capacitors connected to the resonant circuit, for compensating for variations in device characteristic of the oscillator circuit;

executing frequency pull-in of the resonant circuit, based on the temporarily set device characteristic compensation data, comparing a reference voltage corresponding to a control voltage to be supplied to the oscillation frequency setting capacitor at a predetermined temperature and an actual control voltage

and obtaining the result of comparison thereof;

determining the temporarily set device characteristic compensation data, based on the result of comparison; and

repeating a step for temporarily setting the device characteristic compensation data every device characteristic compensation data of the plurality of device characteristic compensating capacitors, a step for executing frequency pull-in and comparing the reference voltage and an actual control voltage, and a step for determining the device characteristic compensation data, and determining the plurality of device characteristic compensation data.

14. An oscillator circuit comprising:

a phase comparator receiving a reference frequency signal and a frequency division signal and generating a comparison signal based on a phase difference between the reference frequency signal and the frequency division signal;

a loop filter connected to the phase comparator for smoothing the comparison signal; and

a voltage-controlled oscillator connected to the phase comparator and the loop filter for generating the frequency division signal, the voltage-controlled oscillator including,

a negative resistor,

an inductor connected in parallel with the negative resistor, and

a first oscillation frequency setting capacitor connected in parallel with the negative resistor and to the loop filter, the first oscillation frequency setting capacitor having a variable capacitance that is changed in response the smoothed comparison signal received from the loop filter,

a second oscillation frequency setting capacitor connected in parallel with the negative resistor, the second oscillation frequency setting capacitor having a variable capacitance that is changed in response a temperature compensation signal received thereto, and

a buffer circuit connected to the negative resistor for outputting the frequency division signal.

15. An oscillator circuit according to claim 14, wherein the second oscillation frequency setting capacitor includes a plurality of capacitors connected in parallel each other.

16. An oscillator circuit according to claim 14, further comprising a temperature detection circuit including a register and a temperature detector.

17. An oscillator circuit according to claim 16,

wherein the temperature detector comprising:

a first current source that outputs a constant current regardless of the temperature;

a first resistor which is connected in series with the first current source and outputs a first voltage proportional to the current of the first current source;

second and third current sources each of which outputs a current proportional to an absolute temperature;

second and third resistors which are respectively connected in series with the second and third current sources and output second and third voltages respectively proportional to the currents of the respective current sources;

a first voltage comparator which compares the second voltage with the first voltage and thereby outputs first temperature compensation data; and

a second voltage comparator that compares the third voltage with the first voltage and thereby outputs second temperature compensation data.

18. An oscillator circuit according to claim 14, further comprising:

a frequency divider for dividing a frequency of a frequency signal by a predetermined division ratio based on a frequency determination signal; and

a register for temporally storing the frequency

determination signal received from a control circuit.

19. An oscillator circuit according to claim 18, wherein the frequency divider includes a programmable counter.

20. An oscillator circuit according to claim 14, wherein the loop filter is a low pass filter.